UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
CHANKONG, DOHM

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *03 July 2008*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *9-44* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *9-44* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to Applicant's arguments filed on 7/3/2008. Claims 9-44 are

presented for further examination.

2.   This is a non-final rejection.

Response to Arguments

3.   Applicant's arguments with respect to claims 9-44 have been considered but are moot in

view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

4.   Claims 27-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. "If one employs means plus function language in a claim, one must set forth in the

specification an adequate disclosure showing what is meant by that language. If an applicant fails

to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and

distinctly claim the invention as required by the second paragraph of section 112." MPEP

§2181(II) citing (In re Donaldson Co., 16 F.3d 1189, 1195 (Fed. Cir. 1994) (in banc)).

        Here, claim 27 is presumed to invoke 35 U.S.C. §112, sixth paragraph because: (1) the

limitations use the phrase "means for;" (2) the "means for" are modified by functional language; and (3) the phrase "means for" is not modified by sufficient structure or acts for achieving the specified function. See MPEP §2181(I). However, the specification fails to set forth adequate disclosure showing what is meant by each of the means being claimed. To overcome this rejection, Applicant should point to specific sections in the specification that show what is meant by each of the means. Dependent claims 28-44 are rejected based on their dependency on deficient claim 26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 9-13, 21, 24-31, 39 and 42-44 are rejected under 35 U.S.C §103(a) as being unpatentable over Bhide et al, U.S. Patent No. 5.852.717 ["Bhide"], in view of RFC 2616, Fielding et al. (hereinafter Fielding), June 1999.

6.   As to claim 9, Bhide discloses a method of polling by an interface unit a transport layer connection to a server, the method comprising the steps of:

a.   receiving, by an interface unit, a first request of a first client to access a server, the

first client and the interface unit communicating via a first transport layer connection

[column 6 «lines 5-13»: Bhide's agent reads on the claimed interface unit];

b.   identifying, by the interface unit that the interface unit has a second transport

layer connection established with the server indicated by the first request [column 6

«lines 20-26»];

c.   determining, by the interface unit, that a second client and the server are not

transferring data for a second request via the second transport layer connection [column 6

«lines 23-25 and 54-56» : determining whether an open connection is "available" which

implies determining whether another client is using the connection to transfer data];

d.   transmitting, by the interface unit, the first request via the second transport layer

connection in response to the determination of step (c) [column 6 «lines 23-25»: using the

open connection when it is determined to be available];

e.   determining, by the interface unit, that the second client and the server are

transferring data for the second request via the second transport layer connection in

response to receiving a third request from one of the first client or the second client to

access the server [column 6 «lines 32-40»: multiple clients requesting access to servers |

column 6 «lines 53-56»: determining that an open network connection is not available];

f.   establishing, by the interface unit, a third transport layer connection with the

server in response to the determination of step (e) [column 6 «lines 54-56»: opening a

new network connection].

Bhide however does not expressly disclose that his agent determines from monitoring

application layer data of network traffic received by the interface unit that the second client and server are or are not transferring data. Bhide does disclose that the agent receives HTTP request and response messages [Figure 10]. Fielding teaches that a client and server can signal that they are finished utilizing a persistent connection using the Connection header field within an HTTP message [pg. 36, §8.1.2 Overall Operation and §8.2.2: teaching that a client or a server can signal to close a TCP connection using the Connection header field. It should be noted that this header field is included in Bhide's messages because they are HTTP messages]. The header includes for example chunk sizes [Fielding, 3.6.1. Chunked Transfer Coding, lines 1-6]. The chunk sizes are used "to verify that it has received the full message." Thus, the chunk size informs that a connection is still being used to receive the entire message. These parameters both correspond to application layer data. Thus, it would have been obvious to one of ordinary skill in the art to modify Bhide to include Fielding's application-layer monitoring functionality. One would have been motivated to modify Bhide in such a manner so as to insure that the all data is received by the client prior to closing the connection [see Fielding, 3.6.1. Chunked Transfer Coding, lines 1-6; Fielding, 3.6 Transfer Codings, lines 1-5 - improve the accuracy and safe transport by utilizing a verification scheme].

7.   As to claim 10, Bhide discloses receiving, by the interface unit, the second request to access the server via one of the first client, the second client or a third client [column 6 «lines 32-40»: multiple clients requesting access to servers].

8.   As to claim 11, Bhide discloses intercepting, by the interface unit, one of the first request,

the second request or the third request [column 6 «lines 4-6» : agent receives all requests].

9.   As to claim 12, Bhide discloses step (b) comprising identifying, by the interface unit, the

server from a destination internet protocol address of a network packet of the first request

[column 11 «lines 14-16»].

10.   As to claim 13, Batra discloses step (b) comprising identifying, by the interface unit, the

server from a path name of the first request [column 11 «lines 14-16»].

11.   As per claims 15 and 16, Bhide disclose the invention substantially as rejected in claim 1

above, but does not explicitly say means for utilizing a content length parameter or a chunk size

field to determine whether all of said information has been sent to said first client. However,

such a feature was well known in the art at the time of Applicant's invention. See the rejection

of claim 1 in view of Fielding which discussed monitoring application layer data such as content

length and chunk size.

12.   As per claims 16, 18, 19, 33, 34, 36, and 37, the claims are rejected for the same reasons

as rejection to claim 15 above. Note that each chunk contains its own size fields.

13.   As to claim 17, Bhide does not expressly disclose determining, by the interface unit, that

the second client and the server have not transferred at least a last byte of data. However,

Applicant's specification recites the use of sequence numbers when transferring data between a client and server [Applicant's specification, pg. 10, lines 10-18]. Applicant's specification recites use of the sequence numbers to determine the last successfully received byte of data. Similarly, Fielding discloses the use of a "last-chunk" identifier; this teaching implies that the transfer of a last byte of data is not complete can be determined based on the application layer data (if a recipient has not received a full message, then the last byte of data has not been received). It would have been obvious to one of ordinary skill in the art to have incorporated Fielding's teachings into Bhide's agent. Such a feature is well known in the art as it provides the ability to monitor data transfer between clients and servers and to insure that the full message is received by determining whether the last chunk has been received.

14.   As to claim 20, Bhide discloses inserting, by the interface unit, information in the first request of the first client to indicate to the server to keep a transport layer connection open [column 17 «lines 37-39»].

15.   As to claim 21, Bhide discloses step (f) comprising waiting, by the interface unit, to use the second transport layer connection to transmit the third request [column 7 «lines 18-24» : implied when the predetermined number of connections has already been opened. The agent would then have to wait for a connection to become available].

16.   As to claim 24, Bhide discloses receiving, by the interface unit, a response to the first

request from the server via the second transport layer connection, and transmitting the response

to the first client via the first transport layer connection [column 6 «lines 13-15»].

17.   As to claim 25, Bhide discloses one of the first, second or third request comprises a

request to open a transport layer connection [column 6 «lines 5-6»].

18.   As to claim 26, Bhide discloses transmitting, by the interface unit, the third request via

the third transport layer connection [column 6 «lines 43-45 and 54-56 where : it is implied that

upon opening a new connection, the new connection is being used to serve the request].

19.   As to claims 27-31, 39 and 42-44, as they are merely claims to an interface unit that

implements the method of claims 10-13, 21 and 24-26, respectively, they are similarly rejected

for at least the same reasons as set forth above.

20.   As to claim 35, as it is merely a claim to an interface unit that implements the method of

claim 17, it is similarly rejected for at least the same reasons as set forth above.

21.   As to claim 38, as it is merely a claim to an interface unit that implements the method of

claim 20, it is similarly rejected for at least the same reasons as set forth above.

22.   Claims 14, 22, 23, 32, 40 and 41 is rejected under 35 U.S.C §103(a) as being

unpatentable over Bhide and Fielding, in view of Gopal et al, U.S Patent No. 6.163.812

["Gopal"].

23.   As to claim 14, Bhide does not expressly disclose transmitting, by the interface unit, the

first request via the second transport layer connection prior to receiving, by the interface unit,

one of a finish command or a reset command from the second client. However, such a feature

was well known in the art at the time of Applicant's invention. In the same field of invention,

Gopal is directed towards an application that maintains a pool of unused connections in a

connection pool [column 10 «lines 12-17»]. Gopal discloses transmitting, by the interface unit,

the first request via the second transport layer connection prior to closing a connection by

submitting a finish (FIN) packet [column 10 «lines 18-41»]. It would have been obvious to

incorporate Gopal's teachings into Bhide. One would have been motivated to modify Bhide as

Gopal would enhance Bhide's functionality by providing the capability of receiving additional

connection requests from other clients to use the same connection prior to closing the connection

through the use of the FIN packet.

24.   As to claim 32, as it is merely a claim to an interface unit that implements the method of

claim 14, it is similarly rejected for at least the same reasons as set forth above.

25.   As to claims 22 and 23, Bhide does not expressly disclose receiving an acknowledgement

from the second client that data transfer has completed or transmitting the third request in

response to receiving the acknowledgement and prior to receiving a request to close a transport

layer connection between the second client and the server. However, such a feature was well

known in the art at the time of Applicant's invention as evidenced by Gopal. Gopal discloses

receiving an acknowledgement from the second client that data transfer has completed and prior

to receiving a request to close a transport layer connection between the second client and the

server [column 10 «lines 36-41» : sending of a FIN command implies that all the data has been

transferred]. It would have been obvious to one of ordinary skill in the art to incorporate Gopal's

teachings into Bhide. One would have been motivated to modify Bhide as Gopal would enhance

Bhide's functionality by providing connection closing capability through the use of the FIN

packet.

26.   As to claim 23, Bhide discloses transmitting requests after a connection has been returned

to the connection pool. According to Gopal, a connection is only returned to the pool upon

receiving the acknowledgement from the client that the data transfer is complete [column 10

«lines 36-41»]. Therefore, Bhide's teaching of transmitting a third request on a connection that is

no longer being used is done in response to the acknowledgement that the data transfer is

complete.

27.   As to claims 32, 40 and 41, as they are merely claims to an interface unit that implements

the method of claims 14, 22 and 23, respectively, they are similarly rejected for at least the same

reasons as set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-3942. The examiner can normally be reached on Monday-Friday [8:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dohm Chankong/
Examiner, Art Unit 2152